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CALIFORNIA BREADSTUFFS.

THE history of California as a producer may be divided into three periods, each distinctly marked by its main product: First, the eighty years from 1769 to 1848, when she was a stock-raiser; then the mining period, say to 1860, which year marked the time when she entered the lists as a large exporter of bread-stuffs. Her maximum yield in this line seems now to have gone by, and she is entering upon a new condition, where she finds more profit in fruit, wines and oil; a more stable and permanent form of civilization. Her history as a grain producer is so remarkable that it deserves to be recorded before it has faded from our memories.

Her isolated geographical position, separated as she is from her sister states by high mountains on the north, and a desert belt on the east, makes it possible to treat her products and her trade by themselves, at all events until the building of railroads (and even after that time, it is easy to estimate the imports and exports across the state line) and they should be so treated, because her climatic conditions are quite independent of her neighbors, and the factors that make a bountiful crop in California, do not operate either in Oregon or Arizona. These facts, combined with the singular variety in her history, make our subject an unusually interesting chapter in economics.

As viewed in the perspective of history, this trade is not a dry record of statistics; it is full of rapid changes, abounding in situations marvelous and even picturesque, presenting a group of scenes of wonderful variety and interest. In the infancy of the settlement we have the old padre teaching his Indian neophyte to guide the rude home-made plow, little better than the branch of a tree, as he scratched the surface of the ground to receive the precious seed; then the sturdy settler, bronzed by his dusty journey over the plains, breaking up the virgin soil of the interior valleys, and anon deserting the standing crop in his

eagerness to secure a share in the gold of the river beds. The rush of gold hunters follows, and after a time the Golden Gate is white with the sails of ships laden with foreign flour to feed the hungry miners. Then comes a decade of wild speculation, and when it closes the valleys are again waving with grain; the current of trade has been reversed, and a fleet of ships is bearing out upon the broad bosom of the ocean the harvest of wheat returning to the old world, and the strong men of that day are organizing trade in these new channels.

Then follows the marvelous development of the grain-raising valleys, the ups and downs of rain and drought, the wars in Europe pouring gold into the pockets of our farmers, the wild gambling on the Call Board, the competition of Oregon on our own soil, and of India and Argentina in Europe, crushing the market with a mass of low priced wheat, till values fall even below the cost of production. All this lies within the scope of my story, and if I can tell it as I see it, it will not lack interest to the reader.

I.

THE MISSION PERIOD, 1769-1821.

When the Franciscan fathers founded the Missions under Spanish rule, beginning at San Diego in 1769, their first care was to make them self-supporting. Among other food supplies they sowed wheat; what variety it was or whence it came we have no means of knowing, but the wheat grown in the country at the American occupation was a bearded red variety known as "California Club," which has now almost disappeared. The Missions, in their early infancy, depended upon breadstuffs imported from Mexico, but they soon discovered the secrets of the soil and climate, and with the aid of their native laborers they were soon in possession of grain fields, orchards, and vineyards. By 1784, only fifteen years after the first landing, the experiment had become practically self-supporting; the crop of wheat in that year was estimated at 20,000 fanegas,¹ and further shipments

¹ Alexander Forbes puts the fanega at 2.50 bushels. Mr. E. J. Molera tells me the Mexican fanega, in accurate terms, was 2.58 bushels.

from Mexico were declared to be needless. In 1782 Governor Neve sets the price of wheat at \$2.00 per fanega. There seems to have been no flour mills as yet, the reduction of wheat to flour being done by the women with the old Indian metates, or possibly it was ground in astrastras; La Perouse, in 1786, gave the Carmel Mission, in return for courtesies received from the fathers, a hand mill, by which he says one woman accomplished the work of four in the old way. The metate and astrastra were crude devices even for those simple times, and in 1796 a flour mill was erected at Santa Cruz, which was followed by two or three more in the next four years. Some of these were very simple affairs, in which the upper stone or runner was slowly dragged around by the laborers or by a bullock, as I have seen flour ground in China. The more elaborate water mills consisted of a single pair of stones, with the runner fastened directly to the upright shaft of a water-wheel. At this time, in 1800, we get our first estimate of annual product H. H. Bancroft puts the average yield of wheat in the eleven Missions from 1790 to 1800 at 36,000 bushels. The year 1800 was a bountiful season and produced 45,000 bushels. The result of this abundance was an effort the following year to provide an outlet for the surplus by shipping it to San Blas, and the settlers about Los Angeles, at the request of the governor, made up a pool, so to speak, offering in all about 2,270 fanegas, at \$2.50 per fanega, for export; but the movement fell through. In 1808 wheat is quoted at \$2.00 per fanega, and flour at \$1.50-\$2.00 per arroba of 25 pounds, equal to about \$14.00 per barrel.

In those times, as now, nature dispensed the rain with a very uneven hand, and though the Missions were all near the sea the crops varied very much in different years. Thus, in 1814, the total yield was only 49,500 bushels; but in 1818 it ran up to 82,500 bushels. Bancroft gives the average of the ten years from 1811 to 1820 at 67,380 bushels for the Missions alone. On the whole this decade was an era of great prosperity.

Just before this period, sprang up the first recorded export trade in grain as follows: About 1806 the Russians were allowed

to purchase small supplies for their northern possessions, which grew into a regular practice in after years. The amount of wheat sold them in 1817 is stated at 1,396 puds of 36 pounds each, about 502 centals in all. In 1816 the brig "Colonel" succeeded in obtaining supplies for the Hudson Bay Company's trading posts on the Columbia river, although it was in direct violation of the orders of the Spanish Viceroy. This petty trade with the Russian and English posts seems to have been kept up until the American occupation, and to have been about the only outlet for California grain. During this period of peaceful growth, from 1811 to 1820, California attained her highest prosperity under the Missions. In the troubled times that were coming, the power and wealth of the padres were dissipated and agriculture met with a sad decline.

I said above that the Russians were "allowed" to make these purchases, for it was a special privilege. Under the padres, religious conquest was the object of occupying the country, not commercial gain. With this end in view, trade with foreign nations was discouraged, and the very presence of foreigners or foreign ships in their ports was unwelcome. The Spanish vice-roys were in full sympathy with this policy, and were especially hostile to any commerce that would help the rival European nations to obtain a foothold on the northwest coast. But the end of this exclusive policy was at hand. In 1820 Mexico declared her independence of Spain; the following year the California settlements hauled down the Spanish flag, and the country entered upon a new era.

II.

MEXICAN PERIOD, 1822-1846.

A somewhat more liberal policy was adopted. The ports were thrown open to commerce, although the residence of foreigners in the country was still discouraged. The results of this change were not beneficial at first. The revolution was followed by some years of political disturbance in the little community. The missions, deprived of the fostering protection

of the Spanish Government, declined in population and wealth. The agriculture of the colony sustained a positive set-back, and the products of the soil diminished for several years. At the same time the opening of the ports promoted general commerce, though the exports of breadstuffs continued on about the same scale as before; the foreign demand being limited to the Hudson Bay Company's posts and the Russian possessions, two or three small shipments per annum to each, besides perhaps a trifling demand from Honolulu. Further expansion was impossible at this time, as there were no other wheat-consuming peoples within reach.

Bancroft says the average crop of wheat at the missions alone from 1821 to 1830 was 47,595 bushels, a serious falling off from the preceding decade. Under these circumstances prices were well maintained, wheat ranging from \$2 to \$3 per fanega, and flour from \$6 to \$8 per hundredweight. About 1830 the Mexican Government assumed a positively unfriendly attitude towards the missions, resulting in their complete secularization in 1834. During this interval, from 1830 to 1834, the yield of grain fell off still more, averaging only about 40 per cent. of the preceding decade.

At this point Alexander Forbes comes to our assistance with an excellent sketch of California agriculture in his history. According to him the yield of wheat in 1831 was 25,144 fanegas, of a very poor quality. The price he puts at \$2 per fanega in 1834. Maize, says he, is the staple bread-corn. The wheat is of poor quality, though it ought to be good. The cultivation of grain is limited, but from the excellence of the soil and climate he thought Upper California ought to be the granary of all South America. He describes the farming as very rude, simply scratching the surface of the ground with the most primitive plows, and at this time, he adds, there were but three flour mills of the rudest kind among all the missions.

In 1834 the secularization of the missions was completed. The practical result of this movement was that the Indian laborers were scattered, and much of the land of the padres

thrown open to settlement. The agricultural interests of California were set back still further by the change. De Mofras says that the yield of grain of all kinds fell from 122,000 fanegas in 1835 to 7,000 in 1842. This, if true, must refer to the missions alone, and must have been largely offset by the crops of the settlers whose number now began to increase considerably. Wilkes, in the narrative of his expedition, about 1840, gives the average exports at 12,000 bushels of wheat, and Thomas O. Larkin estimates the wheat exports of 1846 at 10,000 fanegas, while flour is quoted at San Francisco in March, 1847, at \$16.

New conditions arose in 1846 which soon altered entirely the nature of the problem. War had broken out between Mexico and the United States, and the conflict soon spread to California. The Bear Flag Revolt took place in June, 1846. Commodore Sloat hoisted the stars and stripes at Monterey on July 7th, and the conquest of Upper California was completed by the end of the year.

At the same time, during the forties, the valleys of Western Oregon had been filling with overland immigrants, the settlers already numbering 10,000 or 12,000 by 1848. They were mostly farmers, and Bancroft states that their crop of wheat amounted in 1846 to 144,863 bushels, and to 180,000 bushels in 1847; nine flour mills were running by 1848, so that flour was only \$4 to \$5 per barrel. This must have cut off the trade to the Hudson Bay Company's posts, and it resulted also in some exports to San Francisco; how much, I have been unable to ascertain, but I find "Columbia river flour" advertised for sale in San Francisco as early as July, 1847.

Still the *Californian* of July 10, 1847, boasts that the expanding wheat culture had brought flour down to \$12 per barrel at San Francisco; and a year later it was quoted as low as \$8. We have now fairly reached the period of the American occupation; and with this change we bid farewell to the fanega and arroba, and measure business henceforth by the bushel and cental in grain, and the flour by barrels.

III.

1847-1852.

We enter here upon a most interesting period, the outbreak of the Gold Fever. The population was slowly increasing by arrivals across the plains, and there was every prospect that agriculture would soon resume its old dimensions, when the discovery of gold by Marshall in January, 1848, set the whole community wild. Slow as the means of communication were in those days the news soon spread to every part of California, and men flocked from all directions to the foothills of the Sierras. Labor was utterly disorganized ; the standing crops were left to the birds and the squirrels. Even in Oregon, men deserted their employments, and it is said that two-thirds of her male population emigrated to California. Prices of breadstuffs rose rapidly under the great demand, and by December, 1848, wheat sold at $6\frac{1}{2}$ cents a pound, and flour at \$26 per barrel.

I need not depict in detail the marvellous changes wrought in the next few years. Many thousands of men made the weary journey across the plains ; steamers were placed upon the Isthmus route ; fleets of ships came around the Horn loaded with immigrants ; they swarmed over the sea from Australia and China and up from Mexico and South America, so that the United States census of 1850, imperfect as it was, disclosed a population of 92,597 persons, while the actual population was at least 110,000 or 115,000.

How could such an army be fed ? California was utterly incapable of providing for it ; but Oregon came to the rescue, and poured her accumulated supplies into the San Francisco market. These were soon exhausted ; but Chili, with a plentiful stock, found a profitable market here, and shipped thousands of tons to San Francisco. Then, too, almost every vessel from our Atlantic ports brought its quota of flour, and for a year or two even Australia sent her small supplies to California. But Chili was our mainstay for some years, until we discovered the productiveness of our own soil, and she must have sent us between

1849 and 1854 the equivalent of neary 800,000 barrels in flour and wheat. This was a time of mad speculation, from 1849 to 1853. The prices fluctuated wildly with the constantly varying supply, and this market suffered ups and downs almost without parallel. I have not been able to get the prices current of 1849, but I have seen it stated that flour ranged from \$6 per barrel in June, to \$40 towards the close of the year. In 1850, it varied from \$8 in April to \$22 in November. 1852 repeated the freaks of 1849, and flour that went begging at \$7.75 in May, was pushed up to \$42 in November.

IV.

1852-1860.

This was the last of such violent extremes. After the first flush of the gold fever was over, farming had been gradually resumed, and the State produced in 1852, 271,763 bushels of wheat, by census report. The enormous prices of 1852 made grain-raising more attractive than mining. Seed wheat sold in the fall of 1852 for 12 cents a pound, and the yield of 1853 in spite of bad rust was estimated at 625,000 bushels; while that of 1854 came up very nearly to 2,000,000 bushels—more than enough to feed all our people. The State had proved her ability to support herself. Wheat was sold that fall for \$1.50 per cental. Little flour mills sprang up all over the inhabited part of the State, whose daily capacity was estimated in the fall of 1854 at 3,215 barrels. Flour settled into a tolerably steady range from \$7 to \$10 per barrel. Chili drew out of the market; shipments from the Atlantic States diminished steadily, and by 1859 ceased entirely.

Where was Oregon all this time? Her population must have been so depleted by emigration to the "diggings" in 1849 that she raised hardly enough wheat to supply her own people, for Oregon flour is rarely quoted, and in the spring of 1853 considerable quantities were shipped thither from San Francisco, but later she had recovered and in the crop year 1855-56 she sent us large shipments, as she has continued to do most of the time since.

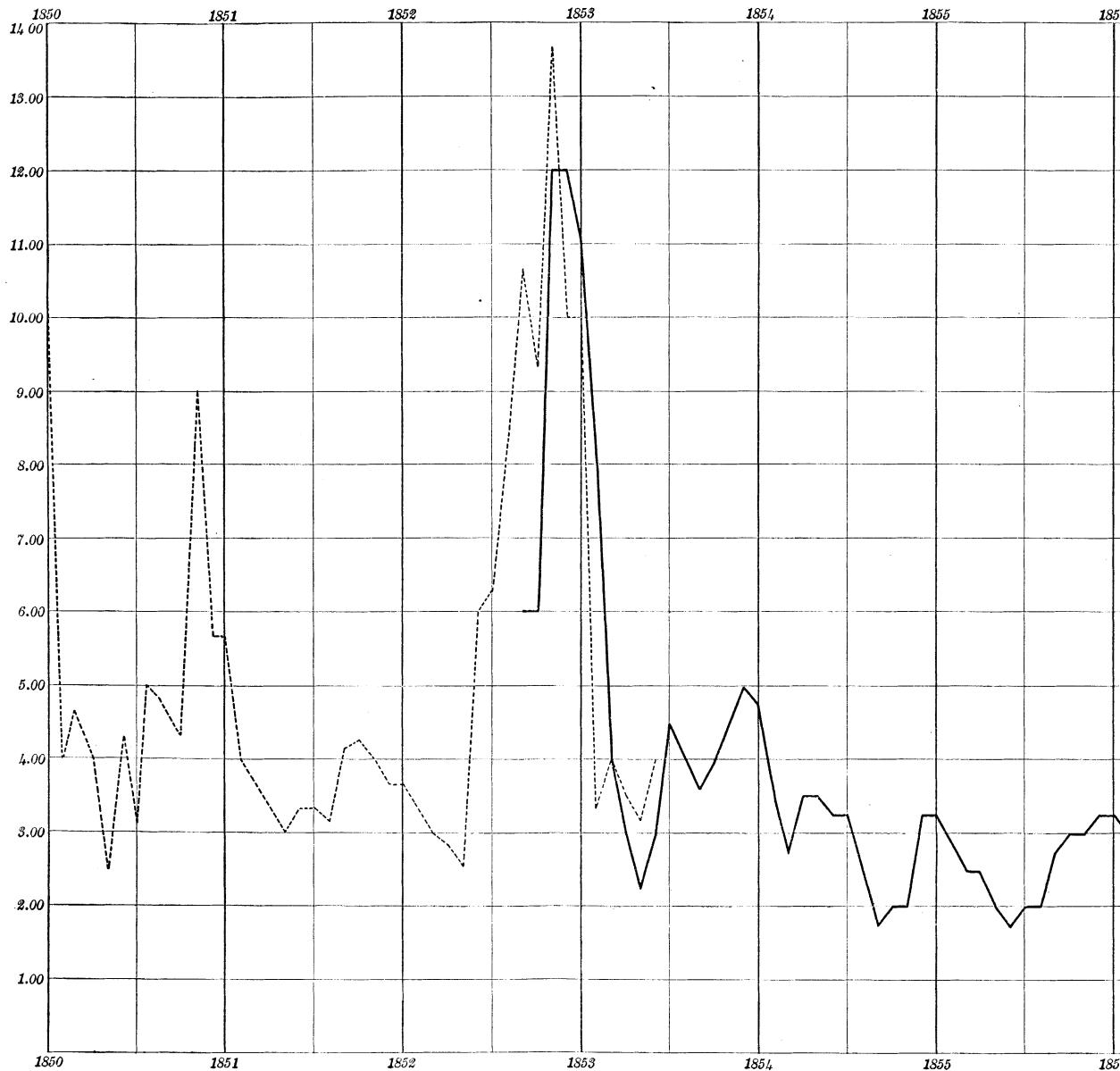
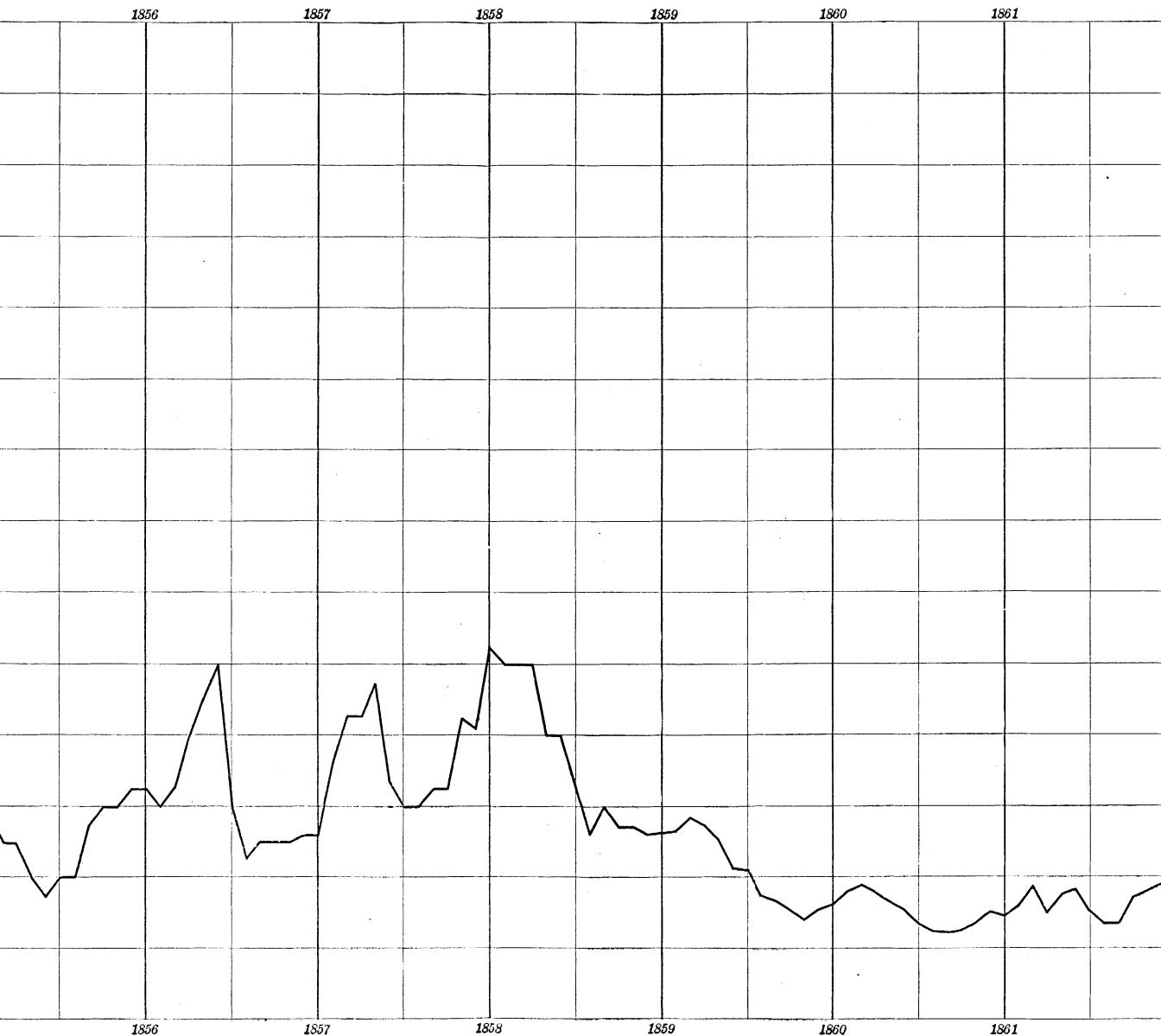
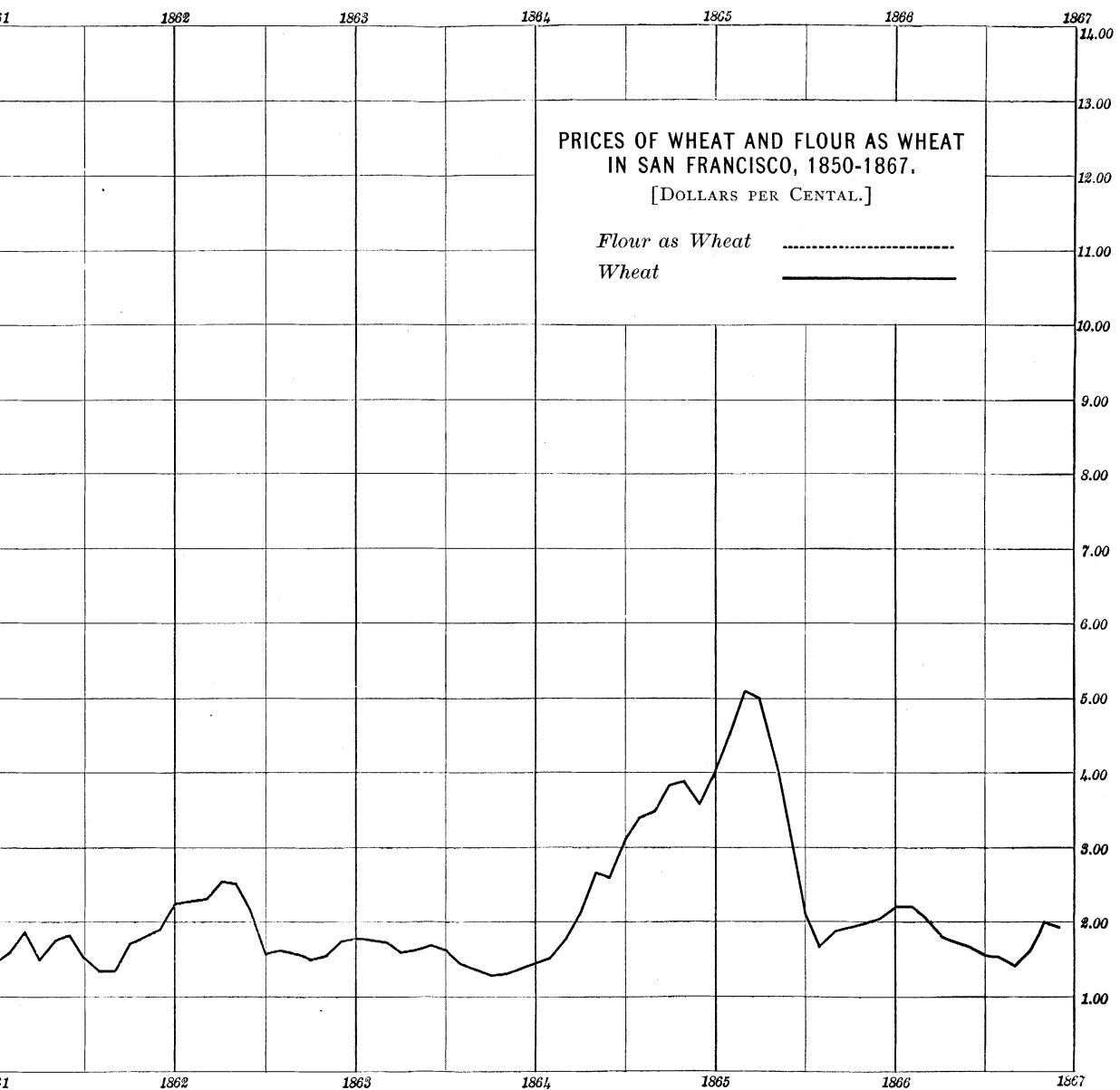


CHART I.





Comparing the small population with the free supplies of 1853 and 1854 we wonder at first what became of the flour; but a large part of the imported stock was damaged, and had to be put to other uses than bread, while an increasing export trade relieved the market somewhat. As early as 1851 trifling exports to our nearest neighbors began, which developed in 1853 into a considerable volume, especially to Australia, and, as before stated, to Oregon. Australia had sent us supplies in 1850, but the discovery of gold in her hills had induced a large emigration, and in 1853 she was passing through the experience of California in 1849, with an increasing number of mouths to feed and a diminishing supply of grain to fill them. She began to draw on us in 1852, increasing her demand with the decline of prices here, and we shipped her in the three years from July, 1854 to June, 1857, 132,869 barrels of flour and 52,388 centals of wheat; then shipments ceased entirely for two years, to be renewed in 1859-60. During the period from July, 1852, to June, 1860, we sent her the equivalent of about 800,000 centals of wheat.

Meantime a considerable trade had sprung up with our neighbors in the North Pacific—China, Mexico, Central America and the Pacific Islands; and in 1855-56, by a curious reversion, we sent several cargoes to Chili, and in 1859-60, to New York. In 1854 and 1855, under the stimulus of low prices, three partial cargoes were dispatched to Great Britain—the first of which I find any record, and the pioneers of the immense fleet which has since carried so many millions of tons of wheat and flour to Europe; five years elapsed, however, before another cargo followed in their wake. These three shipments contained 29,448 barrels of flour and 11,231 centals of wheat; the former was Chili flour exported from bond; the wheat is said to have been of California production. A little later, in 1858, the discovery of gold on Frazer river caused an exodus of miners to British Columbia, which created a new demand for flour from that quarter and enlivened the otherwise very dull period from 1857 to 1859.

The cessation of imports in 1855, followed by light crops and a steady increase of population, had brought about a higher

range of prices, and had checked the export trade materially; but a bountiful yield in 1859 revived it, and we closed the decade with full supplies and an active business.

V.

1860-1870.

The ten years from 1860 to 1870 divide themselves naturally into two equal periods, at June, 1865. The first five years are marked by a remarkable irregularity in rainfall, crops, and prices; the last five we had steady rains, bountiful crops and a good export market. We entered the decade with a large surplus on hand, after two fine crops in 1859 and 1860, the best ever harvested up to that date. The market was overloaded, and prices sank to \$1.25 per cental, at which prices ships were again laid on for Liverpool, and our exports to England that crop year (1860-61) exceeded 1,000,000 centals of wheat and 100,000 barrels of flour.

These low prices stimulated the export business all along the line; and it seemed as though California had fairly entered the ranks of the world's bread producers, but the state had to pass through one more remarkable experience before she settled down to mature sobriety. In the winter of 1861-62 came the heaviest rainfall ever known; then followed two years in which, taken together, nature gave us less than half the rainfall of that one year. There was a fine crop in 1862, and another in 1863, but that of 1864 was a failure from drought; wheat rose rapidly in value—putting an end to all export business—till it reached \$5.25 per cental in May, 1865, and flour sold again at \$15 per barrel; again Chili and New York sent us wheat and flour, and we were changed from exporters to importers.

The next winter, 1864-65, came ample rains, followed by abundant crops and a resumption of the export business on a steadily increasing scale to the end of the decade.

The conditions of the wheat and flour business were undergoing a material change about this time. The production of grain was gradually moving away from the sea coast into the

interior valleys. The coast wheat was dark and soft; inland grain of all kinds was brighter, drier, and stood the voyage through the tropics better; hence it brought a better price; but railroads were scarce and transportation from the interior to tide-water thus became a serious question.

During the civil war the bag question came to the front; before the war we shipped all our wheat in fine white cotton drill sacks, which the miller dusted and used for flour; but when the cotton famine came, such bags were out of the question; we fell back upon burlaps for wheat and "Osnaburgs" for flour, to the great disgust of the miller.

The high cost of bags caused the question of shipping grain in bulk to be mooted. Moderate shipments in bulk had been made to China and Australia, with success, and now the trial was made of a small cargo partly in bulk on the long voyage round the Horn to England; and at the same time a small elevator was put up at South Vallejo; but neither experiment was a success, the insurance companies objected to shipments in bulk, and our grain has been shipped in bags ever since; though I believe a cargo recently went from Tacoma to England in bulk without injury.

We entered on the second half of this decade with a good crop, larger than any yet harvested, and followed by five which averaged nearly double any one year's yield up to this date.

High prices prevailed all over the world at this time and stimulated the production here. The crop of 1866 was bad in Europe and worse in America; that of 1867 was characterized by the London *Economist* as "alarmingly deficient." We thus entered again on the export business under very favorable auspices. A large amount of wheat and flour was sent to our Atlantic ports from 1866 to 1869, (in the latter year, 1868-69, reaching 61,582 tons), after which it suddenly stopped. For the whole decade it footed up 183,018 tons. In the fall and winter of 1866 the demand upon the New York market was so great that we were able to ship thousands of tons of flour in double sacks to New York by steamer *via* Panama, at a freight rate of \$2 to \$3 per barrel in gold.

Another curious fact is that at the close of the high prices in 1865, caused by the drought, while shipments were on their way hither from New York by sea, we were at the same time shipping flour to New York so that cargoes were afloat at the same time bound both ways between the two ports.

Having now reached the point where exports will be measured by tons, I will premise that all tons in this paper will be "short" tons of 2,000 pounds (the custom of the California trade); except that in discussing rates of freight to Europe, the ton of 2,240 pounds will be used. Also, that in giving aggregates, unless otherwise stated, the figures include both flour and wheat, the former reduced to wheat at the rate of 300 pounds of wheat per barrel of flour.

Returning to the trade of the decade in hand, in 1867 we resumed the European business on a large scale, our shipments thither amounting, from 1860 to 1870, to 850,511 tons, most of which went forward the last three years of the decade. From this time on, California wheat becomes a potent factor in the European food-supplies.

During the ten years, Australia took grain and flour of us steadily except in 1864-65, after the drought; her shipments aggregated 154,302 tons for the whole period. British Columbia and Russian America imported moderately but steadily up to 1865-66, after which the trade declined temporarily. The yield of the Frazer River lines had diminished, and the miners were leaving the country. Their shipments for ten years footed up 30,046 tons. The trade along the coast, from Cape St. Lucas to Panama, was fairly inaugurated during this period, and we shipped thither 32,728 tons, almost entirely in flour. China and Japan became steady customers for the whole period, with decrease in wheat and very large increase in flour towards the close; footing up for the whole period under review 160,228 tons. There was a fitful trade in wheat and flour to South America, mostly for Peru and Brazil; amounting in all to 35,207 tons. The islands of the Pacific also drew on us mainly for flour. The largest amount in one year was 13,401 barrels in

1850

1851

1852

1853

1854

1855

7,000,000

PRODUCTION, EXPORTS AND IMPORTS OF
WHEAT IN CALIFORNIA, 1850-1867.

Production, centals ———

Exports, " ————

Imports, " ————

Rainfall, inches - - - - -

5,000,000

4,000,000

3,000,000

2,000,000

1,000,000

Base

32

24

16

8

Base for 0
Rainfall 1850

1851

1852

1853

1854

1855

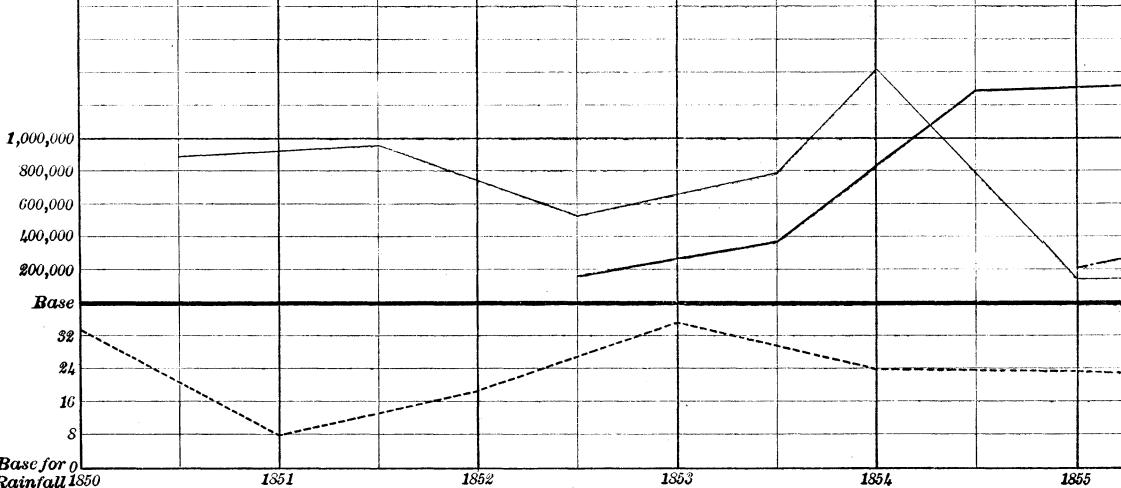


CHART II.

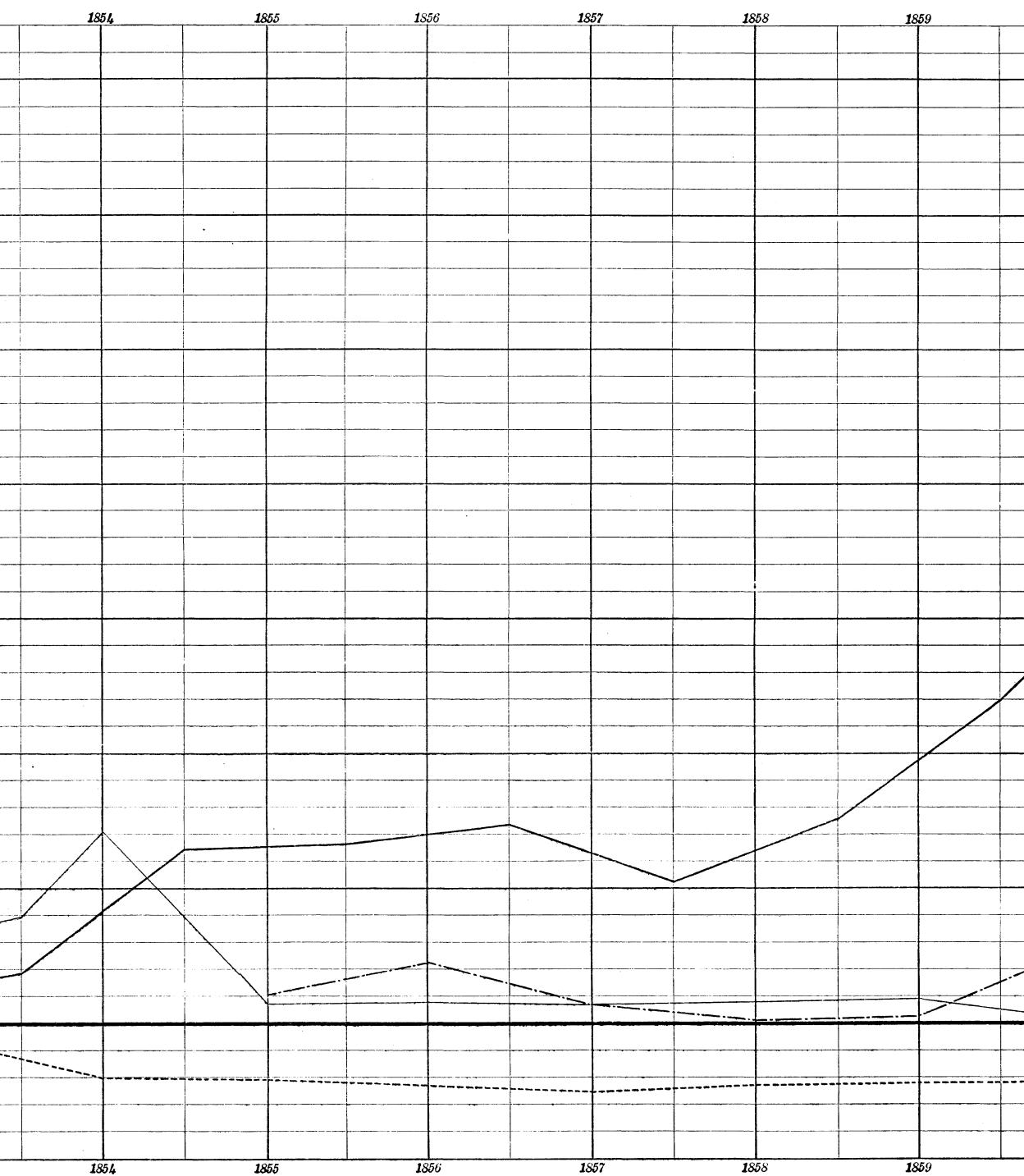
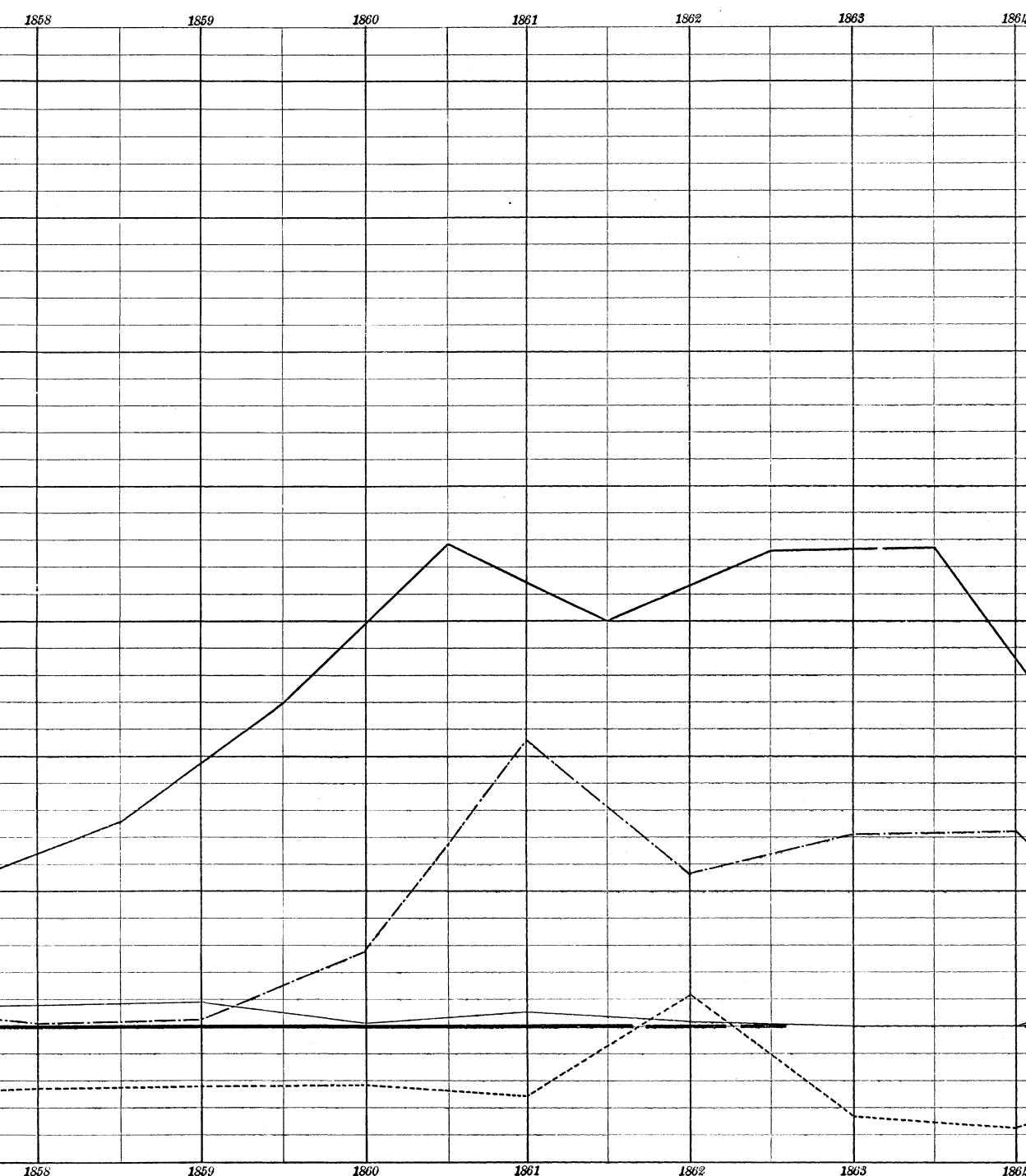
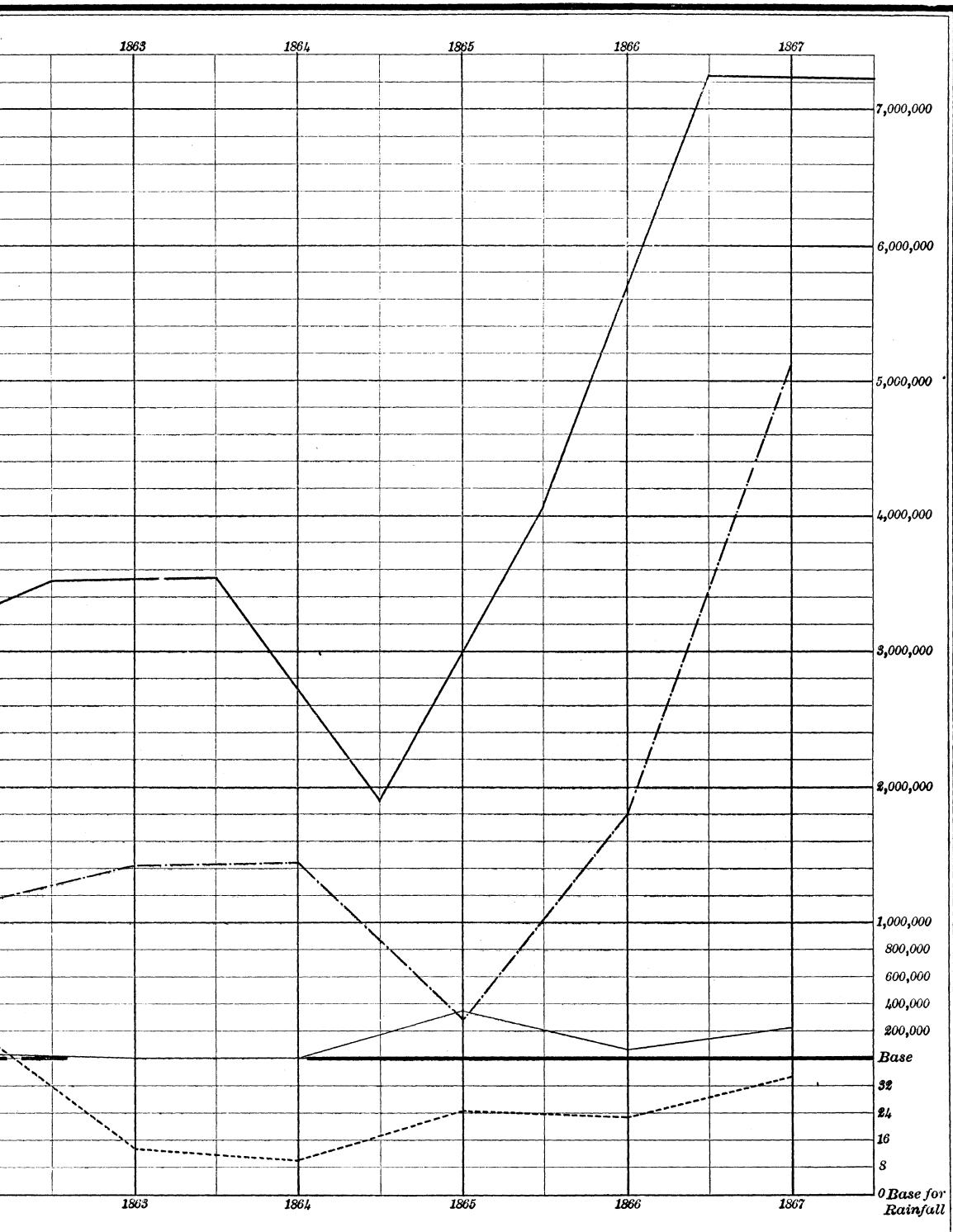


CHART II.





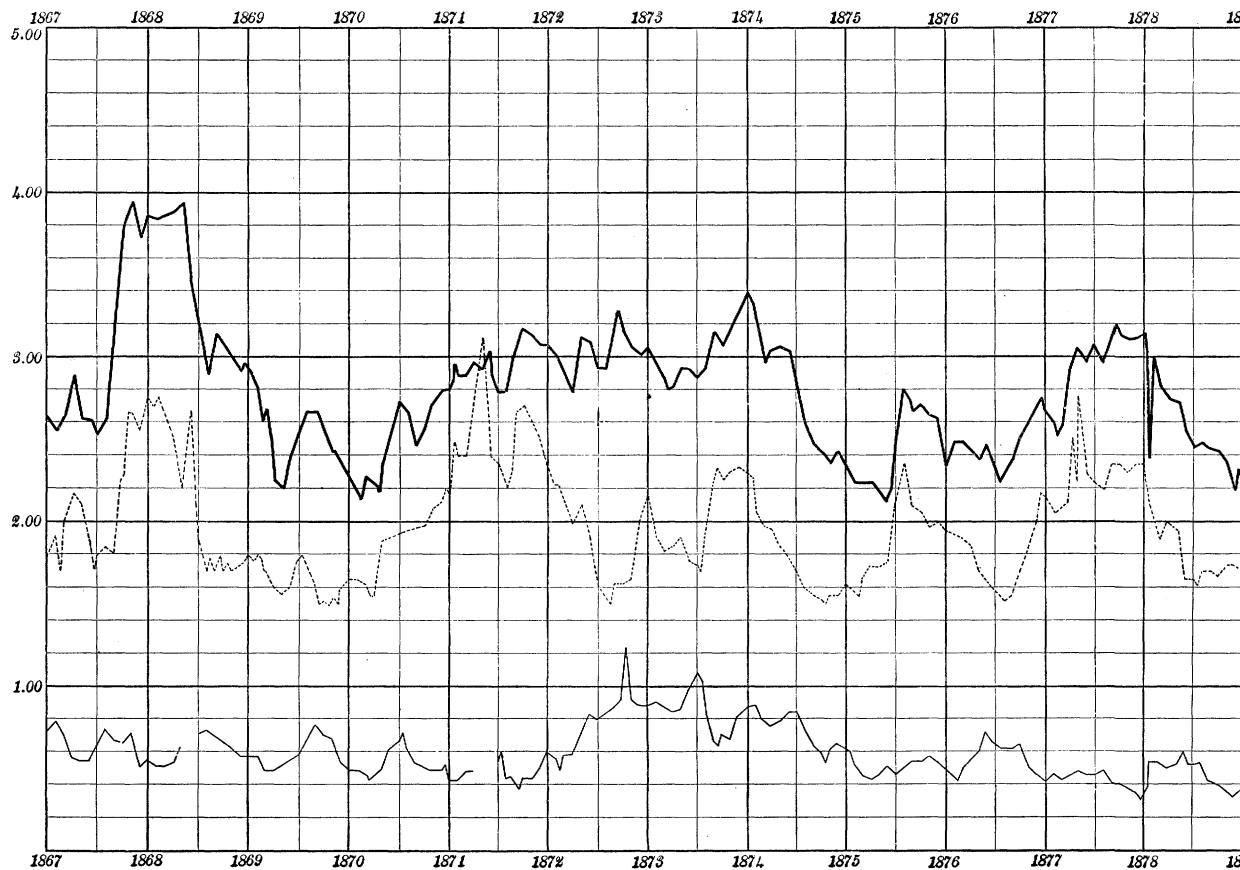
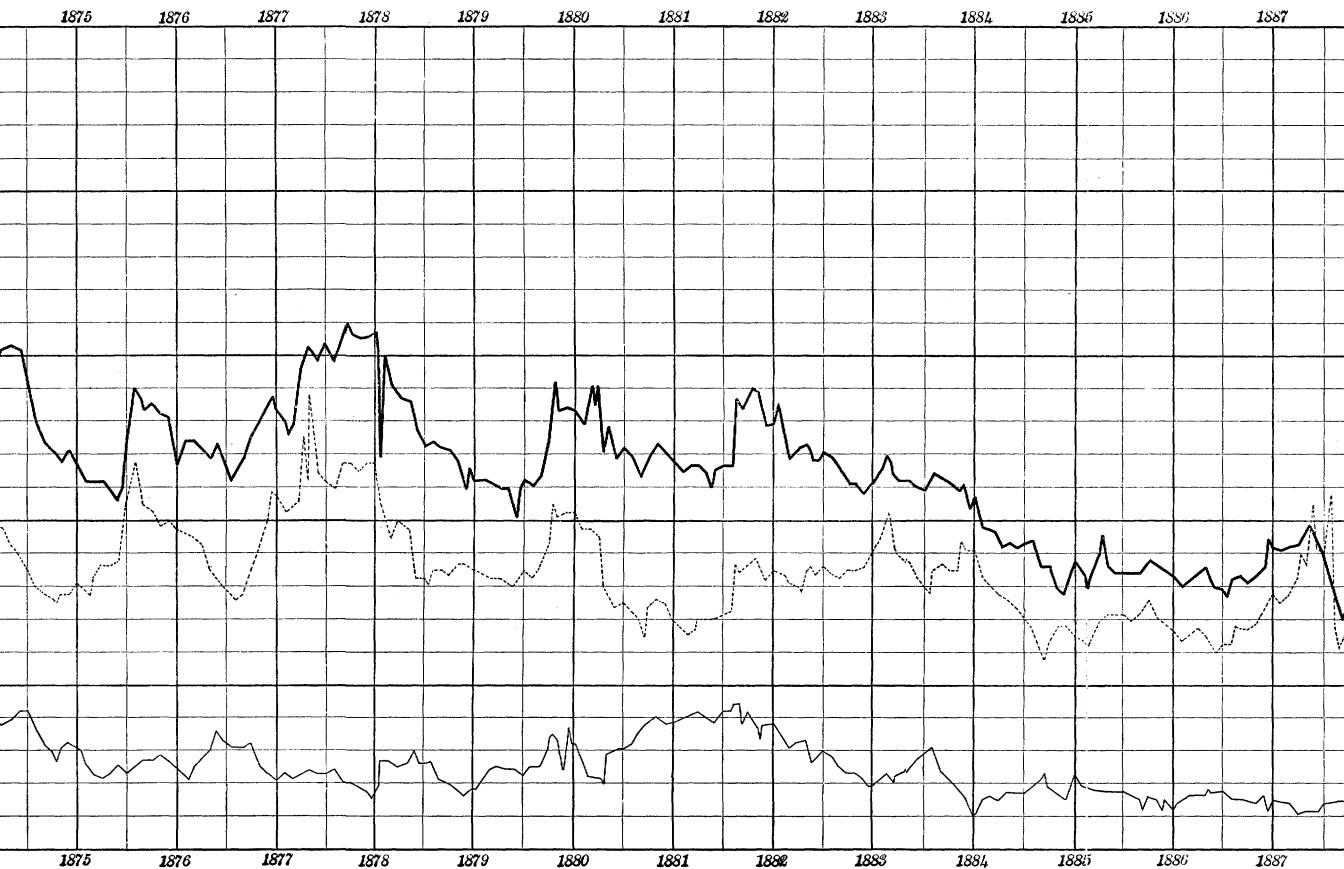


CHART III.



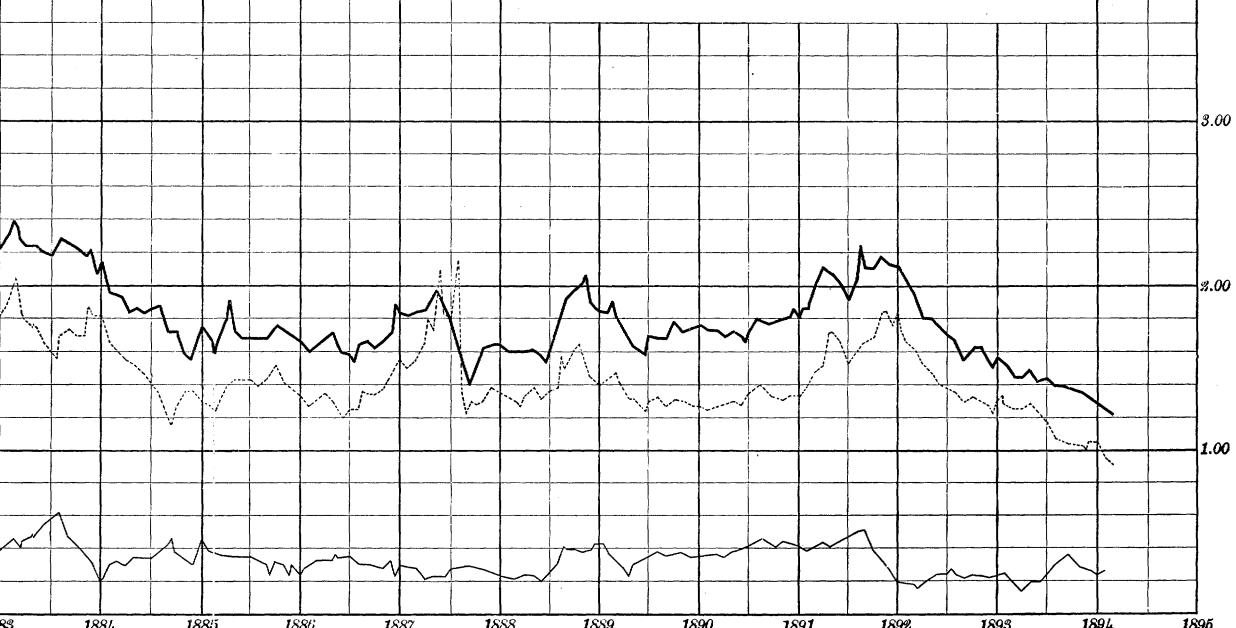
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PRICES OF CALIFORNIA WHEAT, AND FREIGHT FROM SAN FRANCISCO TO LIVERPOOL, 1867-1894; [DOLLARS PER CENTAL].

Price in Liverpool

Price in San Francisco

Freight



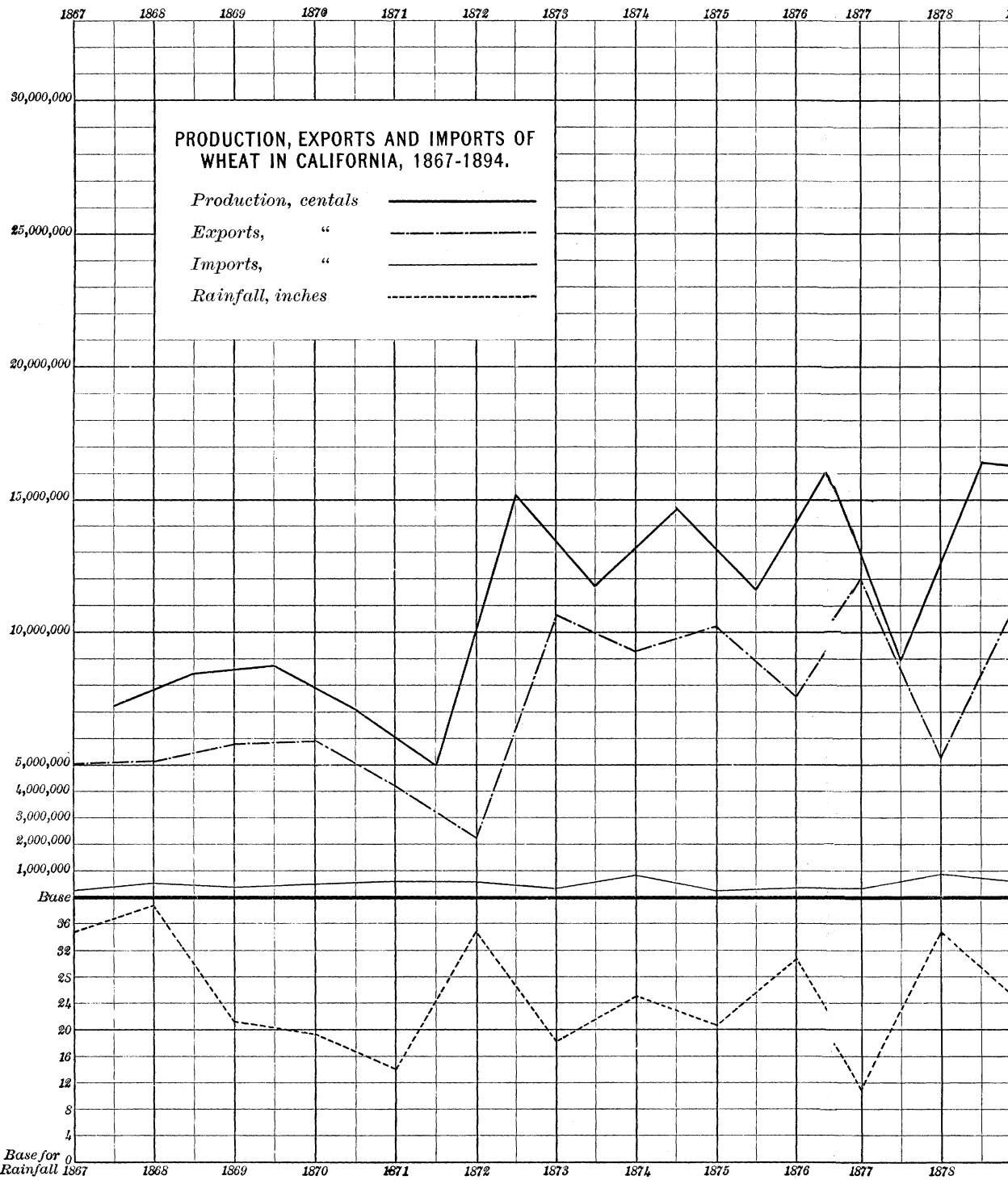
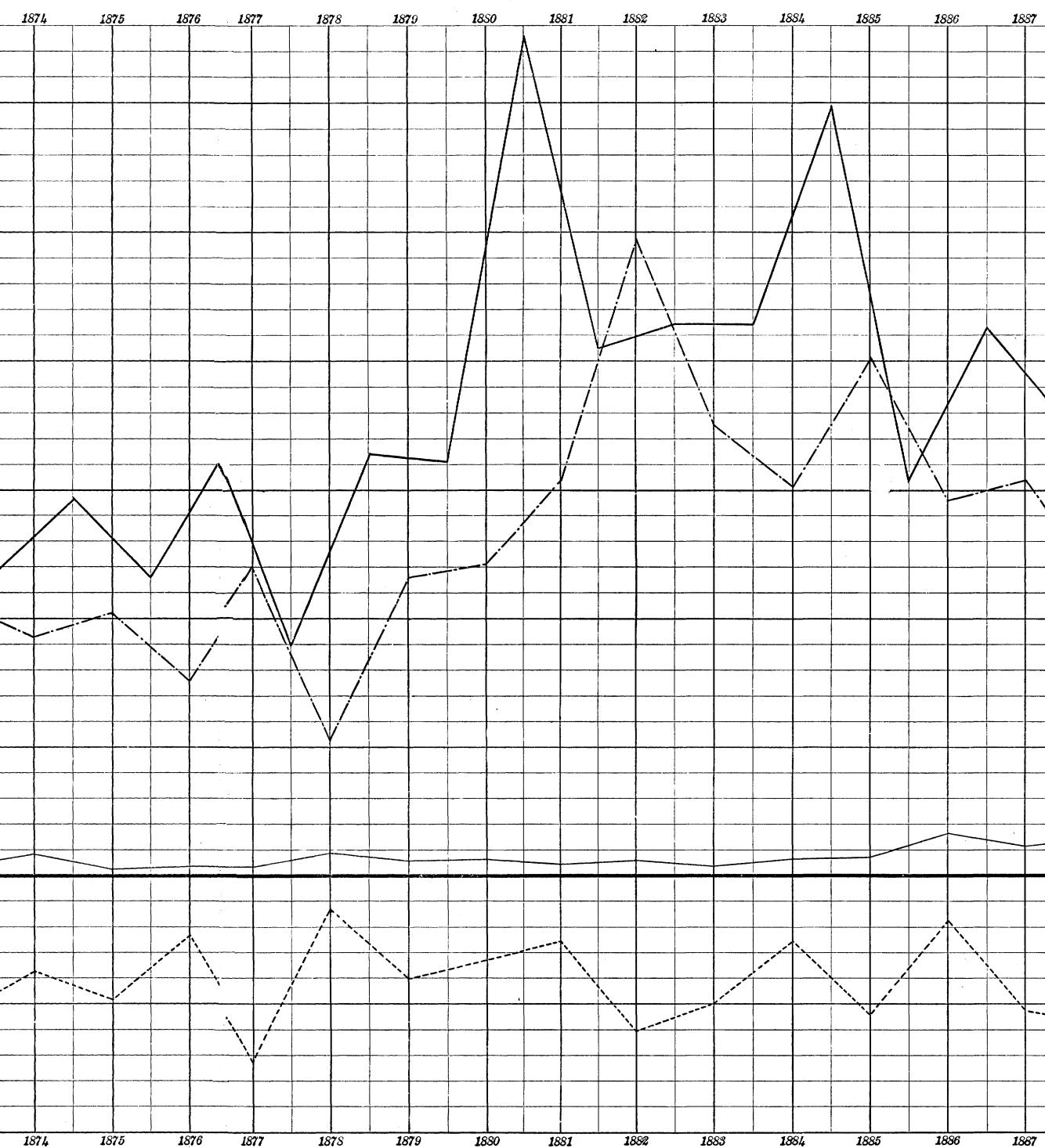
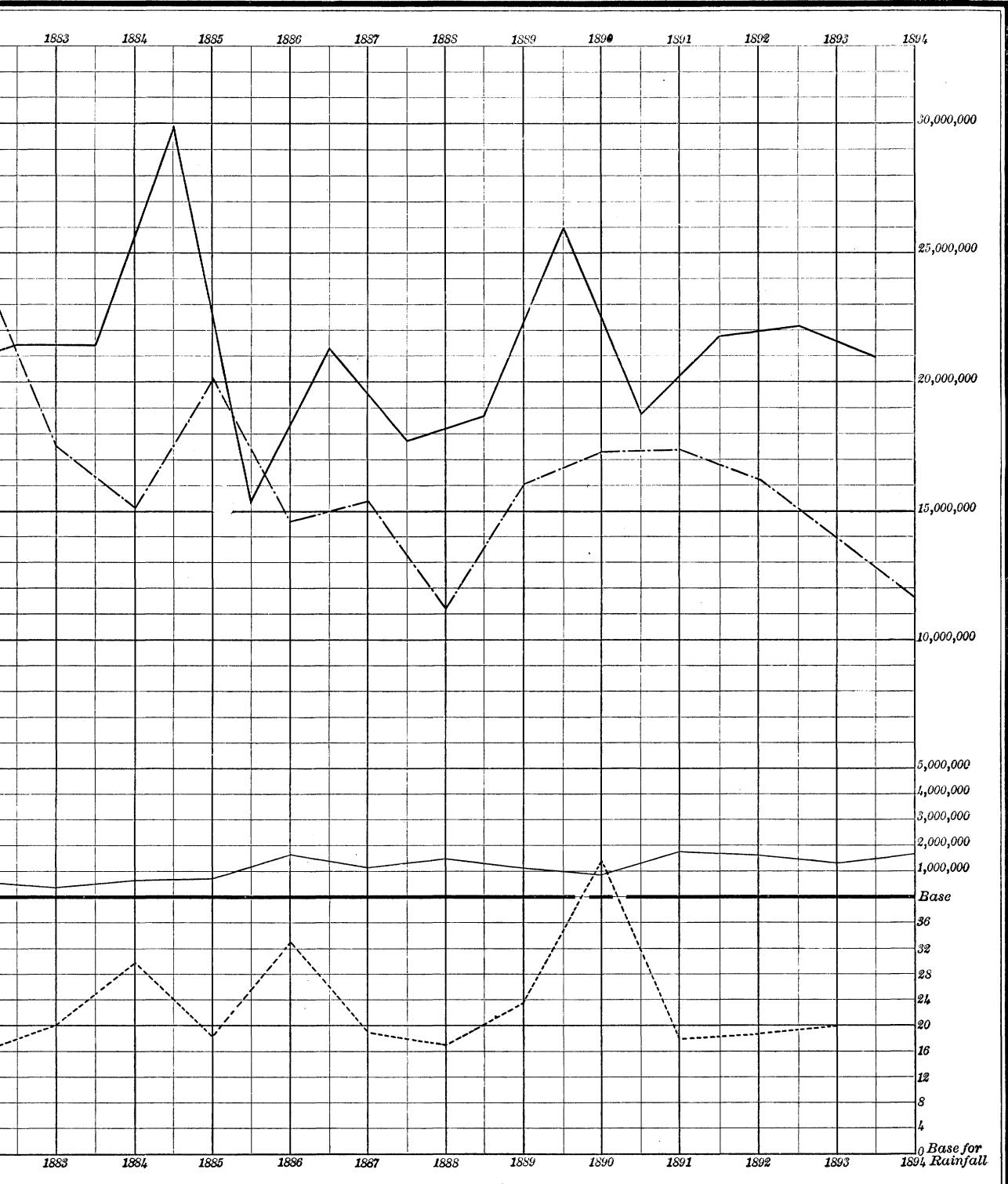


CHART IV.





1869-70, and in all, for the ten years, 11,185 tons. And, finally, there was a very fluctuating trade with the East Indies, probably consisting largely of return cargoes for Manilla and Calcutta, amounting in all to 15,036 tons.

The total exports of the decade were 2,640,740 barrels of flour and 22,123,011 centals of wheat, equivalent to 1,502,262 tons of wheat. My estimates of the crop-field for the ten years foot up 54,768,820 centals, or 2,738,441 tons of wheat.

My general subject is divided naturally at the year 1867. Prior to that time the market was confused, depending sometimes on the volume of imports, sometimes on the size of the crop, and again on the volume of exports, and in the latter case, in some years the price was regulated by the Australian demand, and sometimes by European prices. But after 1867, when all our home demand and local customers had been supplied, we had always a surplus for Liverpool. Therefore, from this time on the Liverpool export is a constant feature of the business, and Liverpool prices regulate our market. For this reason I have divided the charts at this point, because it marks a new era.¹

VI.

1870-1880.

The decade from 1870-71 to 1879-80, was on the whole a period of great prosperity, still it presents singular fluctuations, though not as remarkable as those just reviewed. It included two dry winters, 1870-71 with 14.10 inches of rain, and 1876-77 with only 10 inches, each followed by a scanty yield. Abroad it was marked by wars in Europe, the French-Prussian war in 1870-71 and the Turkish-Russian in 1877-78, each causing high prices. The result was that wheat brought over two cents a pound for more than half the decade. The period opened with \$1.90 per cental, which the dry winter of 1870-71 soon raised to \$3.10 in May, 1871. Extreme prices in Europe maintained the market till the bountiful harvest of 1872 gave ships the

¹See Charts, p. 528.

advantage over wheat; freights rose to the enormous figure of 95 shillings in July, 1873, and wheat fell to \$1.70. The see-saw between the two rivals, freight and wheat, continued through the decade. The scanty crop of 1877 gave wheat the advantage again, and it rose to \$2.35 under the influence of the Turkoo-Russian war, after which it settled down, closing the period in June, 1880, at \$1.47 $\frac{1}{2}$.

The building of new railroads during these ten years opened up many miles of new land, which, under the stimulus of high prices were put into wheat. The exports of the period aggregated 4,426,798 barrels of flour and 72,123,213 centals of wheat, or reducing both to wheat, 85,403,607 centals (=4,270,180 tons), an average of over 427,000 tons of wheat per annum. The total crops of the ten years amounted to 147,923,060 centals (=7,396,153 tons).

Nearly 99 per cent. of the wheat went to Europe, only one and a half per cent. being distributed between New York, Australia, Cape Town, South America, and China. The flour flowed in much the same channels as during the previous decade; up to 1873 moderate shipments were made to New York, which gradually ceased. Australia and New Zealand drew from us in moderate amounts; South America took considerable flour and an unusual quantity of wheat from 1875 to 1880; the China demand steadily increased, reaching 255,303 barrels in 1878-79; our other regular customers bordering on the Pacific, such as Central America and Mexico, Hawaii and Siberia, continued to draw flour from us in a steadily increasing volume. The decade as a whole was one of marked prosperity; good crops with high prices made the farmers happy and the State rich.

VII.

1880-1890.

The next ten years, 1880 to 1890, wrought great permanent changes in the business. The extension of railroads in the interior valleys widened vastly the area available for wheat; the acreage under the plow was greatly enlarged; the yield increased

correspondingly, and in the first half of this decade production reaches its maximum. The year 1880 beat the record, with a yield of 32,537,360 centals, or 1,626,868 tons. No year since has equaled it. This abundant harvest was due largely to the spring rains, which were unusually copious that year. The lightest yields of the decade were in 1885, 1887, and 1888, each after a light rainfall; the crop of 1885, the smallest of all, was 761,739 tons. The ten years' yield reaches the enormous figure of 210,651,180 centals (= 10,532,559 tons), an average of 1,053,-256 tons per annum.

Thus the volume of business was very large, but the results were not so cheering, as prices averaged very much lower than for the preceding decade. Values in the English market suffered a marked decline mainly by reason of increased receipts from India, and our prices, of course, followed. The period began with moderate figures here, say one and a half cents per pound, and the market rose under the influence of short crops in Europe till it touched the old figure of two cents in the spring of 1883. From that it fell off and never rallied materially, except under the artificial stimulus given for a short time by the gambling deal in the spring of 1887. The Produce Exchange Call Board was established in 1882, introducing a speculative element into the market which has at times deranged prices seriously. In the spring of 1887, the deal alluded to above ran wheat from a Liverpool parity of about \$1.40 up to \$2.17,—a figure above the value of the wheat in England. This stopped all export for some months, and when the movement collapsed, wheat immediately returned to \$1.35, its normal value at that time, and remained below \$1.65, closing the decade at about \$1.25.

The grain exports of the ten years were almost entirely to Great Britain and the continent of Europe; two or three ships took small lots for New York; a few small cargoes were sent to Cape Town; some wheat and flour went to Australia, and during the Chilian war considerable was shipped to South America, but the great bulk went to Europe. The wheat exports of the entire decade reached the enormous figure of 136,074,031 centals.

Flour shipments were also immensely increased. A heavy business grew up in flour to England, especially from 1880 to 1885, but diminished towards the close of the period. Meantime our regular customers, the countries bordering on the Northern Pacific Ocean, continued their ordinary demand on us. China was, as usual, the heaviest buyer, increasing her trade to 437,471 barrels in 1885. Japan by this time had fairly come out of her shell, and had begun using our flour quite freely. Central America increased her demand steadily, and Hawaii, Mexico, British Columbia, and Siberia did a moderate but steadily increasing business. Meantime a new enemy to our flour trade appeared in the form of direct shipments from Oregon and Washington to China and Japan. Hitherto these mills had had no outlet to Asia except through San Francisco, but the completion of the northern overland roads caused steamers to be put on direct from Asia to the northern ports. While this flour brings a lower price than ours in those markets, the Oregon competition has seriously lowered the price in Asia, and displaced much of our product.

The entire shipments of flour from 1880 to 1890 were 9,968,-291 barrels,—equivalent to 29,904,873 centals of wheat. Add to this the wheat exports mentioned above and we find the exports of these ten years represented 165,979,604 centals of wheat, or 8,298,980 short tons (=830,000 tons per annum nearly).

VIII.

1890-1894.

The remaining four years, July, 1890 to June, 1894, require no special detailed notice. Crops were fair in quantity, and our exports averaged nearly the same as for the period from 1880 to 1890. Fourteen years have elapsed since the banner year 1880, and no sign of equaling it. The remarkable feature of the European trade for the last four years has been the decline of California wheat to 23 shillings per quarter in London, lowering the price to 90 cents per cental here—prices far lower than were ever known before, and most disastrous to the state.

The immediate cause of this is the flood of wheat from Argentina poured on the English market, already heavily weighted by free supplies. One curious incident of the business here during the last two years was the shipment of flour from Minnesota to Los Angeles, and from Dakota across the Rockies and over to China. These were small ventures, and are not likely to be increased, but they are interesting as illustrating the new conditions of the trade.

I had intended to give a brief sketch of the Oregon and Washington export business, but have, up to the present, been unable to get full statistics. Oregon has sent more or less wheat and flour to California ever since 1847, especially whenever prices have been raised by droughts, or boomed above their natural level by the gambling on the Call Board; also some little flour finds its way by rail from southern Oregon into northern California. As these receipts affect our own exports, they are stated in detail in the tables;¹ during the last seven years the imports into California from Oregon and Washington have amounted to nearly 500,000 tons in wheat equivalents for the whole period (=71,049 tons per annum).

To give some conception of the volume of Oregon and Washington exports, I add the footings of tables from the Produce Exchange Reports: Oregon exported by sea, during eleven years, from 1881-2 to 1891-2, inclusive

Wheat,	-	-	-	-	40,090,206	centals.
Flour,	-	6,054,429	barrels	=	18,163,287	"
					58,253,493	"
					Equal to	2,912,675 tons.

Of which domestic ports received:

Wheat,	-	-	-	-	8,065,443	centals.
Flour,	-	1,626,285	barrels	=	4,878,855	"
					12,944,298	"
					= 647,215 tons = 58,110 tons per annum.	

¹See Appendix I.

Substantially all of this came to San Francisco.

The small shipments of wheat made from San Diego and Wilmington have been included in the general aggregates of exports, and require no further attention.

And now, in conclusion, what is the outlook? First, the wheat yield of the state is apparently diminishing. Taking the crops from 1878 to 1893, inclusive, sixteen years, the first eight years averaged 1,084,531 tons per annum, the last eight years averaged 1,043,956 tons,—a falling off of 4 per cent. I am well aware that two exceptionally bountiful years, 1880 and 1884, came into the first eight; but we must remember that during the last eight years the population has increased largely, and over 1,000 miles of railroad have been built, opening up many square miles of fresh soil, not only without any corresponding increase of wheat production, but with actual diminution.

No, the trouble is wheat does not pay. With the increase of Indian shipments to England, wheat fell, beginning in 1883, to a general level of \$1.25 to \$1.40 per cental here, at which price there ceased to be much profit in it, even with the best farming machinery, and the influx from Argentina has now brought it down to actual cost of raising. Other products of the soil pay better, and wheat farming is being abandoned, at all events till wheat becomes profitable.

Now, we need about 500,000 tons for the yearly requirements of the state, exclusive of its European shipments; that is, for our own food, and seed, and feed, and our regular flour trade in the North Pacific Ocean, which amounts to about 800,000 barrels annually. All we raise over this 500,000 tons must find a market in Europe, and this makes the price of the rest.

What, then, is the chance of better prices in Europe? In January, 1882, wheat was ten shillings and nine pence per cental in Liverpool. From that time it has steadily declined, till it is worth less than five shillings today, and yet the world's supply has steadily increased so that the visible stocks on January, 1894, were larger than were ever known before. Forty years ago the

wheat consumed in England was raised mainly on her own soil, and most of her imports were raised on high-priced land by well-paid labor, earning good wages, in gold. Since then the conditions have changed greatly, and now a constantly increasing proportion of her supply comes from cheap land, tilled by cheap labor, paid in silver or paper currency. The English farmer goes to the wall, he cannot stand up against India, Chili, and Argentina. Who goes next?

We cannot stand it long against the present odds, and must turn to other uses for our land. Wheat export is the resource of a new community and of wasteful farming. I grieve to see the state wearing out its soil to give cheap bread to Europe, and every new product that can be raised profitably gives me new satisfaction. Smaller holdings, with diversified farming, is the indispensable condition of prosperity here. And I look forward to the time when this huge bulk of wheat shall be cut down one-half, and for it we shall substitute a hundred different products requiring more labor, more skill, more industry, and returning us more profit and greater prosperity.

HORACE DAVIS.

SAN FRANCISCO, CALIFORNIA.